



## *HVAC Tech Note #22 – January 2005*

### Sequencing Parallel Natural Draft Boilers

Although it is becoming common for boilers to have dedicated (primary) circulators, there are still parallel boiler systems that have primary only pumping, which means all of the boilers are flowing all of the time. If the system is also variable flow (mostly 2-way control valves), it's possible that during periods of low demand the flow through any boiler may be lower than is required to handle the full boiler output. With low mass boilers, this can create all kinds of problems like noise, high limit trips, and even physical damage.

If the boilers have stage or modulating firing it is a good idea to bring all of the boilers on at low or part fire before any boiler is staged to high fire. By the time it is necessary to have any boiler on high fire the demand and the flow should be up and every boiler should have adequate flow. And, since any unfired natural draft boiler that has constant flow is radiating heat up the flue when it is off, staging the boilers this way shouldn't make the plant less efficient.

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